

# Work Order ID 67794

Wednesday, March 30, 2011 11:36:08 AM



Page 1

Item ID: D3196-3

Accept



Setup Start



Revision ID:

Stop



Item Name: Bar

Start Date: 3/30/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 4/4/2011 Req'd Qty: 4.00

Customer:

Reference:

Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Run Start



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Stop



Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
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Draw Nbr	Revision Nbr
D3196	Rev C

100

0.00



BAND SAW

0.00

Bandsaw

Memo

Jeaspa Bandsaw

Cut blank: (0.75" x 1.50") x 34.750" long Bar

*mk 11/04/05*

*4*

*0*

110

0.00



HAAS CNC VERTICAL MACHINING #1

0.00

HAAS 1

Memo

HAAS CNC vertical machine #1

1-Machine D3196-3 as per Folio FA339 and Dwg D3196-302-  
Deburr

*B.A 11/04/05*

*4*

*0*

120

0.00



QC2- Inspect parts off machine FAI/FAIB

0.00

QC

Memo

Quality Control

*B.A 11/04/06*

*4*

*0*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Work Order ID 67794

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Page 2

Item ID: D3196-3

Accept



Setup Start



Revision ID:

Stop



Item Name: Bar

Start Date: 3/30/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 4/4/2011 Req'd Qty: 4.00



Customer:

Reference:

Run Start



Approvals: Process Plan: \_\_\_\_\_ Date: \_\_\_\_\_ Tooling: \_\_\_\_\_ Date: \_\_\_\_\_

Stop



QC: \_\_\_\_\_ Date: \_\_\_\_\_ SPC (Y/N): \_\_\_\_\_ Date: \_\_\_\_\_

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
--------------------------------	--------------------------	----------------------	---------	--------	--------------	---------------	---------------	------------------	----------------

130 QC8- Inspect parts - second check 0.00

*OK 11/04/06*

*4 0*



QC Memo 0.00

Quality Control

140 Chemical Conversion Coat per QSI005 4.1 0.00

*4 BL 11-4-6*



HandFinish Memo 0.00

Hand Finishing

150 Grey Sandtex(Ref:4.3.5.6) per QSI005 4.3 0.00

*M 115128*

*4 BL 11-4-6*



Powdercoat Memo 0.00

Powder Coating

START TIME: *1140* OVEN TEMPERATURE: *300°*  
FINISH TIME: *2110*

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

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# Work Order ID 67794

Wednesday, March 30, 2011 11:36:08 AM



Page 3

Item ID: D3196-3

Accept



Setup Start



Revision ID:

Stop



Item Name: Bar

Start Date: 3/30/2011 Start Qty: 4.00



Cust Item ID:

Required Date: 4/4/2011 Req'd Qty: 4.00



Customer:

Reference:

Run Start



Approvals:

Process Plan:

Date:

Tooling:

Date:

Stop



QC:

Date:

SPC (Y/N):

Date:

Sequence ID/  
Work Center ID

Operation  
Description

Set Up/  
Run Hours

Tool ID

Tool #

Plan  
Code

Accept  
Qty

Reject  
Qty

Reject  
Number

Insp.  
Stamp

160

QC3- Inspect Part Finish

0.00



QC

Memo

0.00

Quality Control

4 φ 11-104/06

170

Identify as per dwg & Stock Location 260

0.00



Packaging

Memo

0.00

Packaging

11/4/7 (4)

180

QC21- Final Inspection - Work Order Release

0.00



QC

Memo

0.00

Quality Control

11/4/7

11-04-7 (4)

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

# Picklist Print

Wednesday, March 30, 2011 11:36:14 AM

Page 1

Work Order ID: 67794



Parent Item: D3196-3



Parent Item Name: Bar

Start Date: 3/30/2011

Required Date: 4/4/2011

Start Qty: 4.00

Required Qty: 4.00

Comments: IPP Rev: A New Issue 05-11-08 JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
M6061T6B0.750X01.50 0		Purchased	No			100	f	61.6800	2.89	12.16842			



6061-T6 Bar .750 X 1.50

<u>Location</u>	<u>Loc Qty</u>	<u>Loc Code</u>
MAT003	61.68	
116405	16.6	
116604	1.5	
116623	43.58	

12.168 mR 4/4/05

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

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DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



<b>DART AEROSPACE LTD</b>		<b>Work Order:</b>	<i>67724</i>
<b>Description:</b> Bar		<b>Part Number:</b>	D3196-3
<b>Inspection Dwg:</b> D3196 <b>Rev:</b> C		<b>Page 1 of 1</b>	

### FIRST ARTICLE INSPECTION CHECKLIST

☒ **First Article**
                         
 ☐ **Prototype**

Drawing Dimension	Tolerance	Actual Dimension	Accept	Reject	Method of Inspection	Comments
34.625	+/-0.010	34.625	✓		TAPE	GA-12
33.650	+/-0.005	33.650	✓		"	"
0.488	+/-0.005	0.487	✓		Vern	GA-01
17.011	+/-0.010	17.011	✓		TAPE	GA-12
0.512	+/-0.005	0.511	✓		Vern	GA-01
1.500	+/-0.010	1.504	✓		"	"
0.464	+/-0.010	0.463	✓		"	"
0.504	+/-0.010	0.501	✓		"	"
Ø0.344	+0.006/-0.001	Ø0.345	✓		"	"
Ø0.660 x 100°	+0.008/-0.001 x 0.5°	0.660 x 100°	✓		"	"
0.962	+/-0.005	0.960	✓		"	"
0.750	+/-0.010	0.753	✓		"	"
4.750	+/-0.010	4.745	✓		"	"
12.531	+/-0.010	12.526	✓		TAPE	GA-12
16.999	+/-0.010	16.994	✓		"	"
21.844	+/-0.010	21.839	✓		"	"
29.625	+/-0.010	29.621	✓		"	"
0.250	+/-0.010	0.260	✓		Vern	GA-01
1.000	+/-0.010	1.010	✓		"	"
R0.125	+/-0.010	R0.125	✓		R-G	ref.
0.987	+/-0.010	0.995	✓		Vern	GA-01
0.060 x 45°	+/-0.010 x 0.5°	0.063 x 45°	✓		"	"

<b>Measured by:</b> <i>H.A</i>	<b>Audited by:</b> <i>aml</i>	<b>Prototype Approval:</b>	N/A
<b>Date:</b> <i>11/04/06</i>	<b>Date:</b> <i>11/04/06</i>	<b>Date:</b>	N/A

Rev	Date	Change	Revised by	Approved
A	04.04.20	New Issue	KJ/RF	
B	06.10.24	Dwg Rev. updated	KJ/JLM	
C	07.05.08	Dwg Rev. updated	KJ/JLM <i>JA</i>	<i>JA</i>

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries

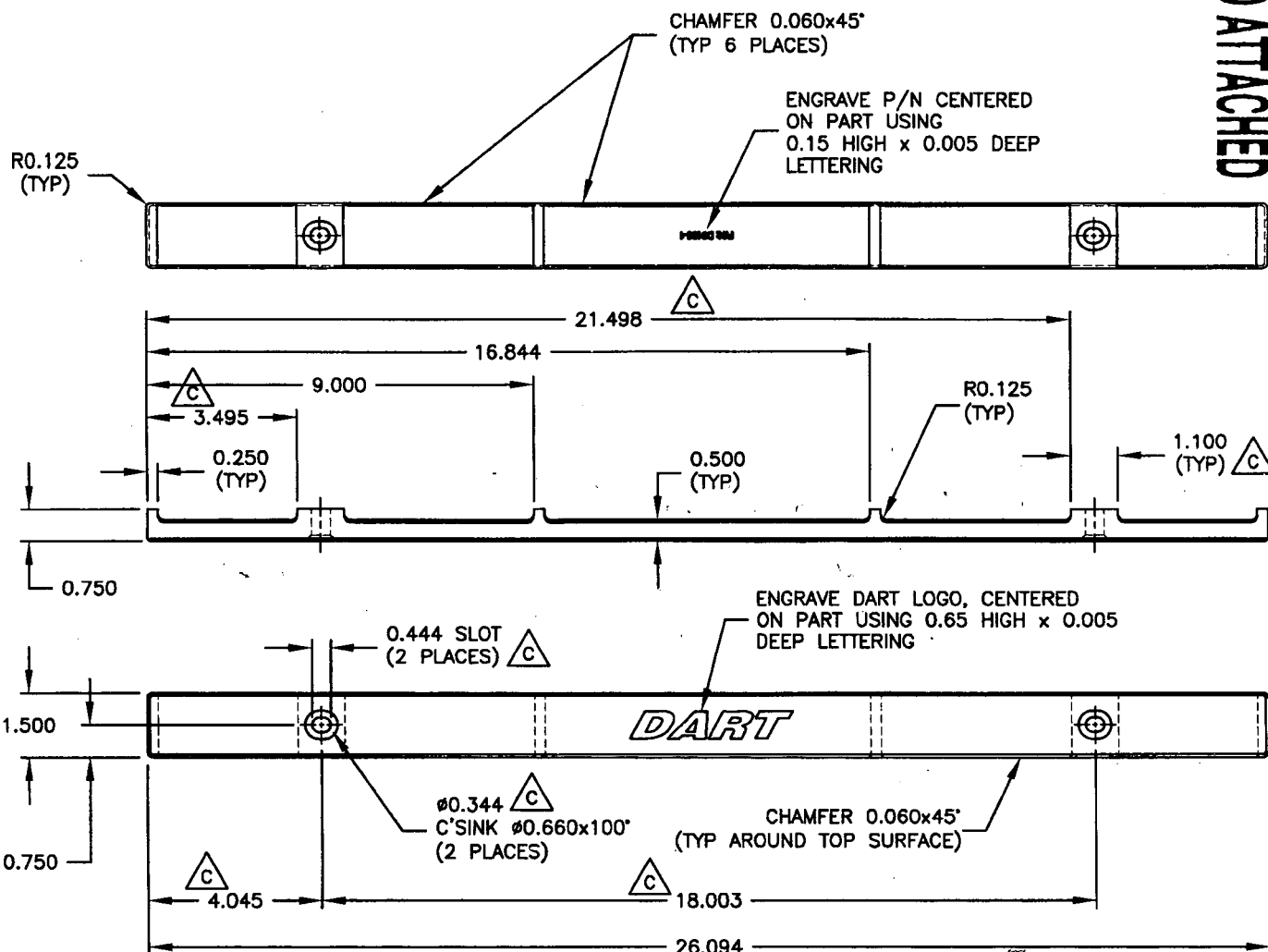
**DART**

RELEASED

06.10.31

DESIGN	DRAWN BY	DART AEROSPACE LTD	REV. C
00	JS	HAWKESBURY, ONTARIO, CANADA	
CHECKED	APPROVED	DRAWING NO.	SHEET 1 OF 3
AM	JS	D3196	
DATE	TITLE	SCALE	
06.10.31	BAR	1:4	
A	03.06.25	NEW ISSUE	
B	06.09.25	ADD D3196-5	
C	06.10.31	ADD SLOTS ON -1; REMOVED -5	

DEO ATTACHED



**D3196-1 BAR**

- 1) MATERIAL: 6061-T6/T651 ALUMINUM (QQ-A-200/8 OR QQ-A-225/8) (REF DART SPEC. M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1  
POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

NO. 111-033C

WORK ORDER

UNCONTROLLED COPY

SUBJECT TO AMENDMENT

WITHOUT NOTICE

RETURN TO

ENGINEERING

SHOP COPY

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

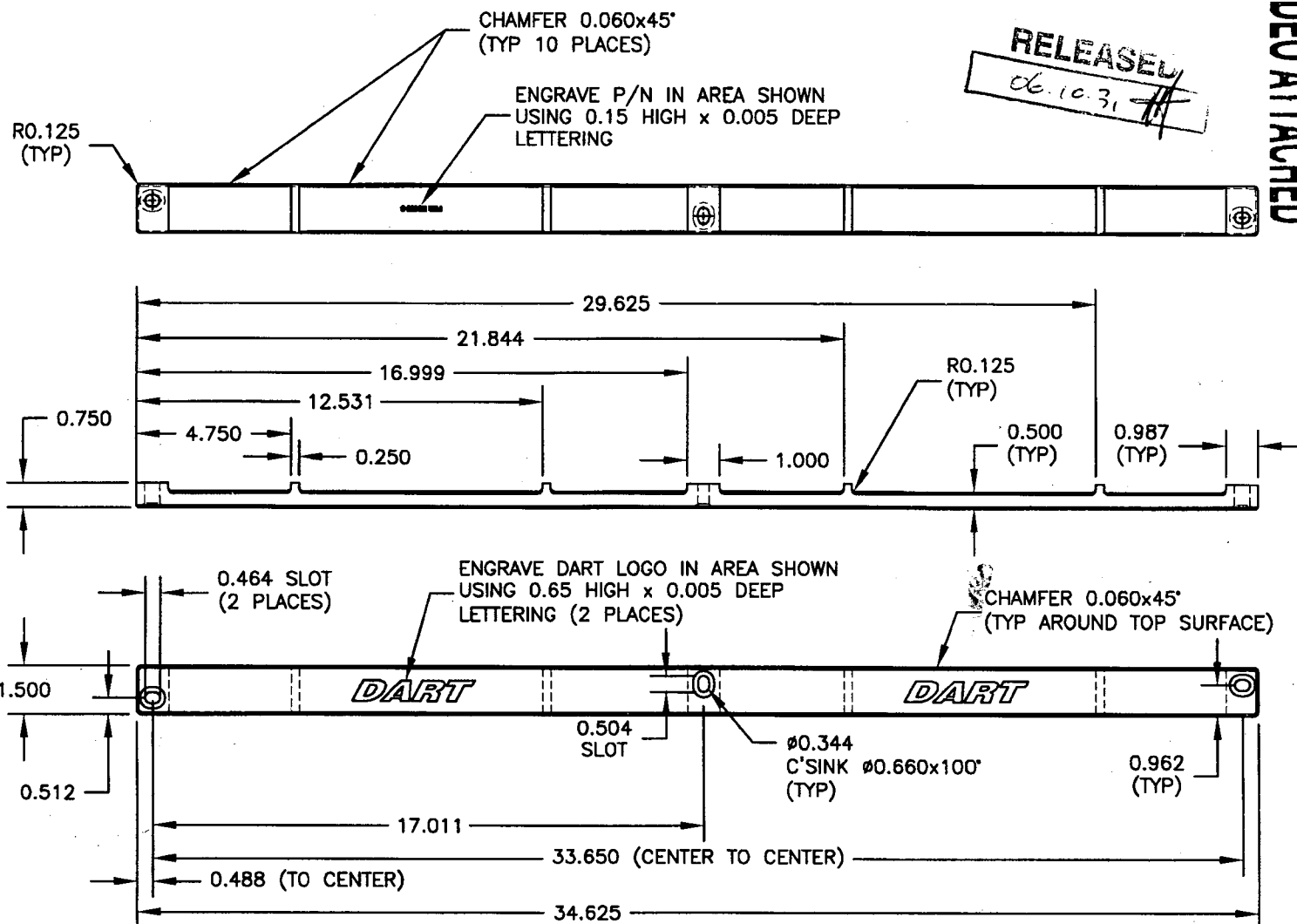
**NOTE:** Date & initial all entries

**DART**

**DETACHED**

RELEASED

06.10.31



**D3196-3 BAR**

- 1) MATERIAL: 6061-T6/T651 ALUMINUM (QQ-A-200/8 OR QQ-A-225/8)  
(REF DART SPEC. M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1  
POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

*W/C*

DESIGN	QC	DRAWN BY	AS	DART AEROSPACE LTD
CHECKED	PH	APPROVED	PH	HAMKESBURY, ONTARIO, CANADA
DATE	06.10.31	TITLE	BAR	REV. C
				D3196
				SHEET 2 OF 3
				SCALE
				1:5

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

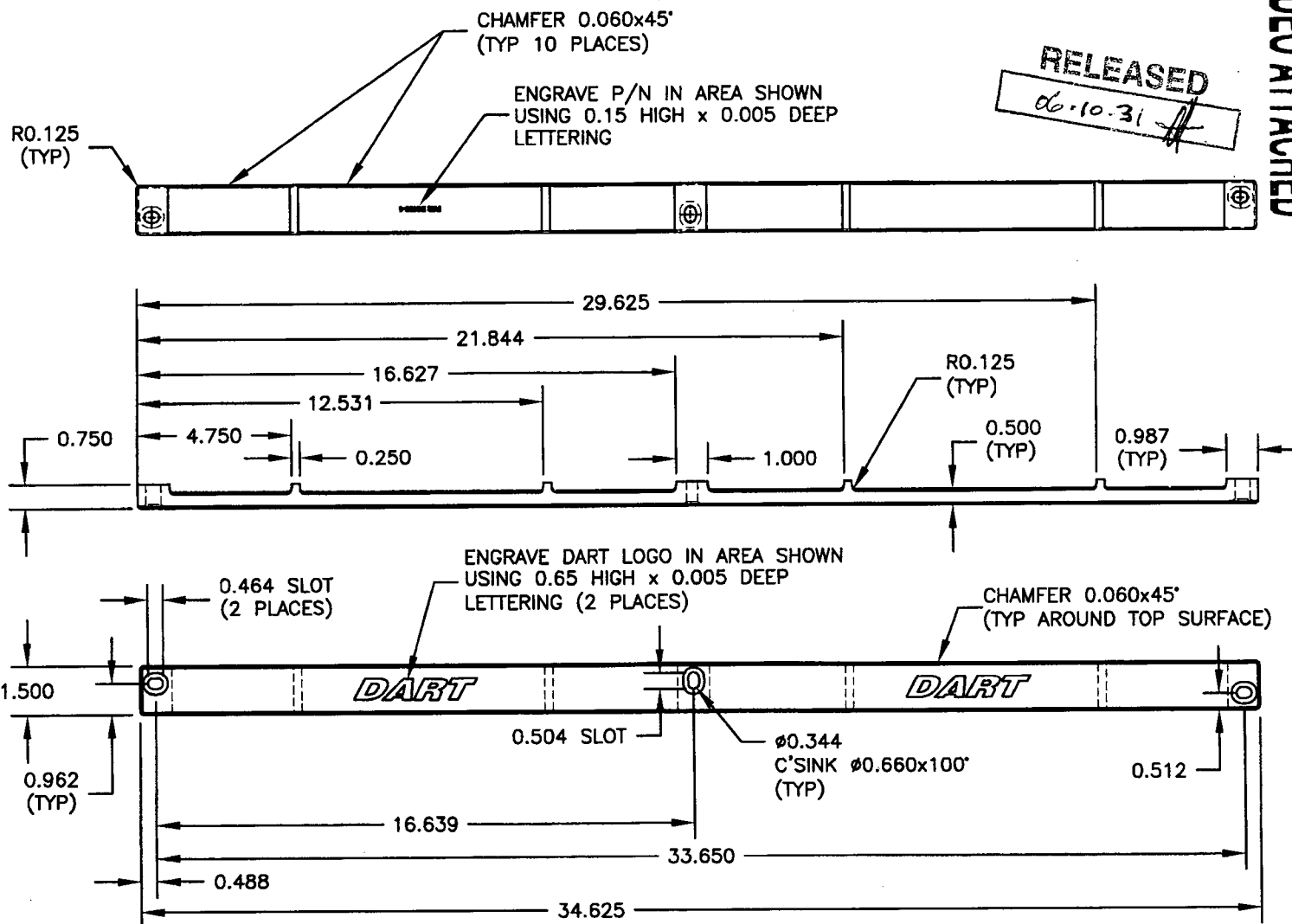
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries

**DART**

**DEO ATTACHED**

RELEASED  
06-10-31



**D3196-4 BAR**

- 1) MATERIAL: 6061-T6/T651 ALUMINUM (QQ-A-200/8 OR QQ-A-225/8)  
(REF DART SPEC. M6061T6B)
- 2) BREAK ALL SHARP EDGES 0.005 TO 0.010
- 3) FINISH: ACID ETCH AND ALODINE PER DART QSI 005 4.1  
POWDER COAT GREY SANDTEX (4.3.5.6) PER DART QSI 005 4.3
- 4) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 5) ALL DIMENSIONS ARE IN INCHES

*06-10-31*

DESIGN	APPROVED	DRAWING NO.	REV. C
CHECKED <i>PH</i>	APPROVED <i>[Signature]</i>	D3196	SHEET 3 OF 3
DATE 06.10.31	TITLE BAR	SCALE 1:5	

**DART AEROSPACE LTD**  
HAMKESBURY, ONTARIO, CANADA

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE		By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries



DRAWING NO. D3196	TITLE BAR	REV. C	DART AEROSPACE LTD ENGINEERING ORDER		D.E.O. NO. D3196-C-1	SHEET NO. SHEET 1 OF 2	SCALE NTS
DRAWN AJS	CHECKED [Signature]	MFG. APPR. [Signature]	APPROVED [Signature]		DE APPR. [Signature]		
DATE 08.08.27	DATE 08.08.28	DATE 08.08.29	DATE 08.08.29		DATE 08.09.04		

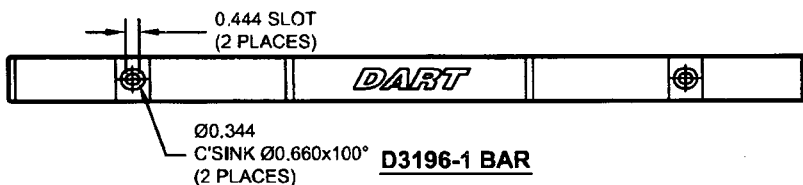
SHEET 1 MODIFY SLOT DIMENSIONING ON D3196-1 AS SHOWN:

IS:



D3196-1 BAR

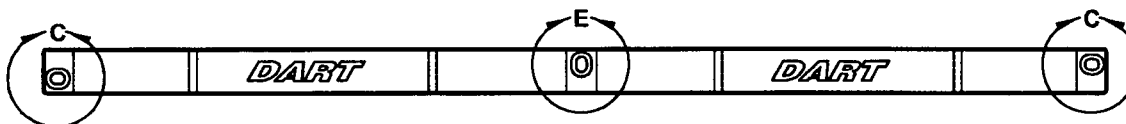
WAS:



D3196-1 BAR

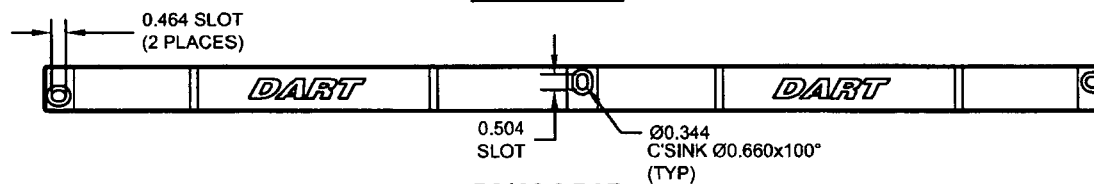
SHEET 2 MODIFY SLOT DIMENSIONING ON D3196-3 AS SHOWN:

IS:



D3196-3 BAR

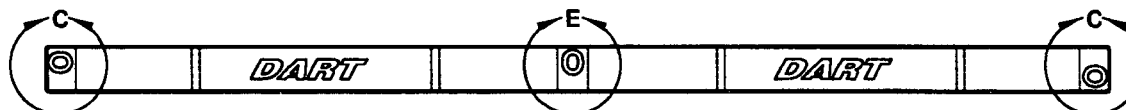
WAS:



D3196-3 BAR

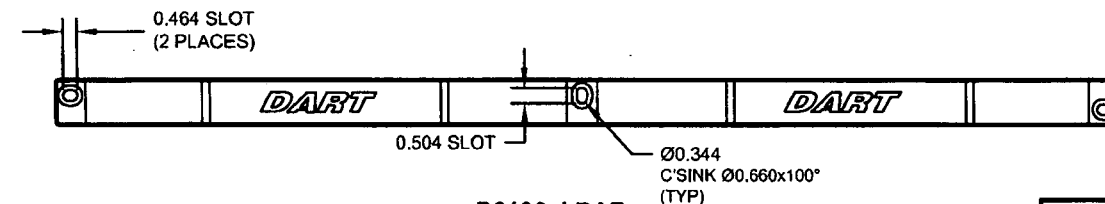
SHEET 3 MODIFY SLOT DIMENSIONING ON D3196-4 AS SHOWN:

IS:



D3196-4 BAR

WAS:



D3196-4 BAR

u/b 67284

W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

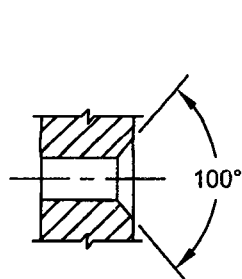
Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

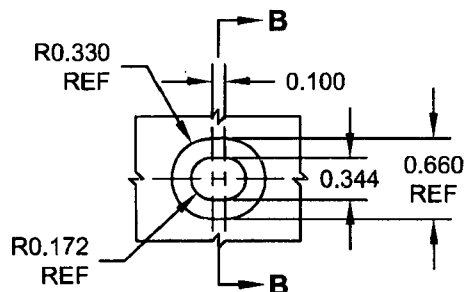
NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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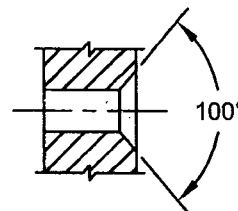
DRAWING NO. D3196	TITLE BAR	REV. C	DART AEROSPACE LTD ENGINEERING ORDER	D.E.O. NO. D3196-C-1	SHEET NO. SHEET 2 OF 2	SCALE NTS
DRAWN <i>ASS</i>	CHECKED <i>[Signature]</i>	MFG. APPR. <i>[Signature]</i>	APPROVED <i>[Signature]</i>	DE APPR. <i>[Signature]</i>		
DATE 08.08.27	DATE 08.08.28	DATE 08.08.29	DATE 08.08.29	DATE 08.09.04		



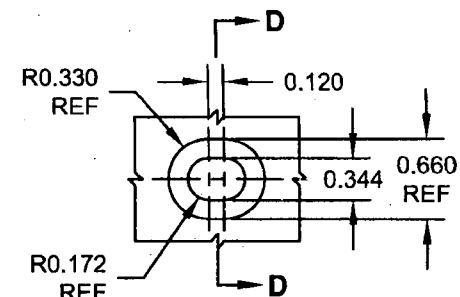
**SECTION B-B**



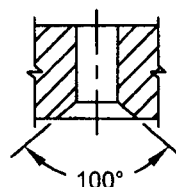
**DETAIL A**



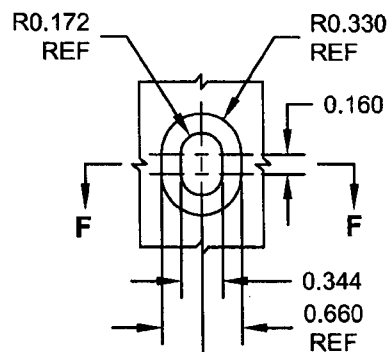
**SECTION D-D**



**DETAIL C**



**SECTION F-F**



**DETAIL E**

*u/o 62294*

NOTE: THIS CHANGE HAS BEEN DONE TO CLARIFY SLOT DIMENSIONS ONLY. NO CHANGES HAVE BEEN MADE TO THE PARTS  
SEE NCR 08-051 FOR FURTHER INFORMATION  
ALL OTHER INFORMATION REMAINS UNCHANGED

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W/O:		WORK ORDER CHANGES						
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector	

Part No: \_\_\_\_\_ PAR #: \_\_\_\_\_ Fault Category: \_\_\_\_\_ NCR: Yes No DQA: \_\_\_\_\_ Date: \_\_\_\_\_

Resolution: \_\_\_\_\_ Disposition: \_\_\_\_\_ QA: N/C Closed: \_\_\_\_\_ Date: \_\_\_\_\_

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

**NOTE:** Date & initial all entries